

NAME _____

PERIOD _____ DATE _____

GRAPHING FUNCTIONS

Given $y = f(x)$, what are the effects of each of the following?

- 1) $y = -f(x)$ _____
- 2) $y = a f(x)$ for $-1 < a < 1$ _____
- 3) $y = a f(x)$ for $a > 1$ or $a < -1$ _____
- 4) $y = f(x) + c$ _____
- 5) $y = f(x) - c$ _____
- 6) $y = f(x + c)$ _____
- 7) $y = f(x - c)$ _____

Based on your conclusions about the effect of each of the above, explain what will happen to the basic graph when graphing the following functions.

1) Basic function: $y = x^2$

- a) $y = (x - 2)^2 + 5$ _____
- b) $y = (x + 3)^2 - 8$ _____
- c) $y = \frac{2}{7}x^2 + 1$ _____
- d) $y = -x^2 - 4$ _____
- e) $y = -x^2 + 8$ _____

2) Basic function: $y = \sqrt{x}$

- a) $y = \sqrt{x+3} + 9$ _____
- b) $y = \sqrt{x-7} - 2$ _____
- c) $y = 7\sqrt{x+2}$ _____
- d) $y = -\sqrt{x} - 11$ _____
- e) $y = -\sqrt{x+3}$ _____

Using the basic function $y = \frac{1}{x}$, write the equation represented by each of the following.

- 1) moves up 6 and left 9 _____
- 2) moves down 1 and right 6 _____
- 3) reflected over the x-axis and moves down 5 _____
- 4) moves closer to the y-axis and moves right 7 _____
- 5) reflected over the x-axis, moves left 2 and up 12 _____

Using the basic function $y = \lfloor x \rfloor$, write the equation represented by each of the following.

- 1) moves down 2 and right 7 _____
- 2) moves up 4 and left 3 _____
- 3) reflected over the x-axis and moves up 4 _____
- 4) moves farther from the y-axis and moves left 6 _____
- 5) reflected over the x-axis, moves down 7 and right 9 _____